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Finally, Sir Robert Kane remarked, that Professor Oldham was somewhat obscure in stating that the soils are collected under his direction, to be examined by Sir Robert Kane. The collection of soils is being made by direction of the Chief Commissioner of Woods, upon the application of Sir Robert Kane, and the specimens are obtained in the several localities by the officers of the Geological Survey, as the most convenient mode of procuring them.

The thanks of the Academy were voted to Sir James Dombrain, for his kindness in undertaking to effect the transmission, from Dingle to Dublin, of a collection of Ogham stones, presented by Mr. Hitchcock to the Museum of the Academy.

NOVEMBER 30TH, 1848.—(STATED MEETING.)

REV. HUMPHREY LLOYD, D. D., PRESIDENT,
in the Chair.

THE Chevalier C. C. J. Bunsen, of Berlin ; C. J. Thomsen, of Copenhagen ; and P. E. Botta, of Paris ; were elected Honorary Members of the Academy in the department of Antiquities.

The Rev. Dr. Robinson read a communication on the relation between the temperature of metallic conductors and their resistance to electric currents. After referring to the researches of Sir Humphrey Davy and others on the same subject, he described and exhibited the instrument used in his experiments, and gave a concise sketch of the mathematical investigations based on them, which led him to the following conclusions.

When a wire of platina is heated by a voltaic current, its resistance to the passage of that current increases with the

heat up to the verge of its fusion. This increase of resistance is not caused by the increased density of the current, by the increased distance of molecules, or the employment of molecular force in generating heat; but is exactly proportional to the temperature. The same is the case with copper wire, and the amount of change bears in both the same ratio to the original resistance. This change should be attended to in all measures of resistance.

The heat generated by a current is as the product of its square into the *actual* resistance, but that attained by a wire ignited in air as the square root of this product.

The cooling power of air is, *in these experiments*, as the temperature; that of radiation as its square.

A wire thus ignited is dark at the two extremities, but the temperature rapidly rises as the distance from them increases, and soon becomes uniform over a large extent of the wire.

Its thermic equation shows that this uniform temperature exceeds the mean by an amount varying from a seventh to a tenth.

The Rev. Dr. Robinson next proceeded to notice a fact of some interest which he lately observed with the Rosse telescope. It related to a remarkable planetary nebula, Herschel's figure 44. This looks, in smaller instruments, like an oval disc, reminding one of the planet Jupiter; but it appears to be a combination of the two systems which he had formerly described. In both these the centre consists of a cluster of tolerably large stars: in the first, surrounded by a vast globe of much smaller ones; in the other by a flat disc of very small stars, which, when seen edgewise, has the appearance of a ray. Now this nebula, which he had recently observed through Lord Rosse's telescope, has the central cluster, the narrow ray, and the surrounding globe. He would also add, as a remarkable proof of the defining power of this vast instrument, that he saw with it, for the first time, the blue companion of